

G25-13

Recommendation – Current salinity should be based on recent empirical data (such as a mean of 2001 values), not model-generated projections. This empirical data should then be the basis for future salinity projections.

Tilewater salinity and selenium loadings are not uniform across the Imperial Valley,³³ suggesting that an appropriate means of minimizing such loadings would be to concentrate on-farm conservation efforts and/or fallowing efforts on parcels identified as contributing disproportionately to such loadings.

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Recommendation – Include a map displaying mean annual salinity and selenium loadings by irrigated parcel.

Recommendation – Modify the Proposed Project so that it would target conservation and/or fallowing efforts at those parcels with disproportionately high salinity and/or selenium tilewater loadings.

E. DEIR/DEIS FAILS TO ADEQUATELY DEFINE “REGION OF INFLUENCE.”

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The DEIR fails to define the “region of influence” adequately. DEIR Section 1.3 (“Project Location and Region of Influence”) lists six subregions, describing each of them except the “Salton Sea.” At one point, the DEIR defines the Salton Sea subregion as “The Salton Sea and its shoreline back to 0.5 feet around the Sea,” while several pages later the definition is tautological: “**Salton Sea:** This subregion is defined as the Salton Sea.”³⁴ It is unclear why the executive summary description of the Salton Sea subregion is more descriptive than that within the report itself, though this description also fails to provide meaningful information. As evidenced by IID’s own reports of daily elevation of the Sea at “Fig Tree John,”³⁵ provisional daily elevations fluctuated from –225.99 to –227.16 feet mean sea level during 2001, and rose as high as –225.48’ in May 1995. Given that small increases in elevation can translate into significant increases in the shoreline and surface extent of the Salton Sea, the Salton Sea subregion is defined inadequately, and suggests that the subsequent analysis of impacts to the Salton Sea are likely understated.

F. DEIR/DEIS IGNORE RESPONSIBILITY TO PROTECT WATER IN SALTON SEA TO PROTECT PUBLIC TRUST

Response to Comment G25-14

The commenter suggests that selection of lands for implementation of water conservation measures and fallowing should be based on the level of contribution of these lands to contaminant loadings. However, evidence suggests that the level of contaminant loading in a particular area is more dependent on management practices than on local land characteristics, particularly when the constituents of concern are salinity and selenium. In the case of the IID Service Area, the source of these contaminants is the Colorado River supply water rather than the leaching of the local soils. Therefore, implementation of water conservation measures are likely to have similar overall contaminant loading implications regardless of the specific location of implementation.

Response to Comment G25-15

The commenter is correct in stating that the definition of the Salton Sea subregion in the Executive Summary of the Draft EIR/EIS is defined as “The Salton Sea and its shoreline back to 0.5 feet around the Sea.” The commenter is also correct in stating that Chapter 1 of the Draft EIR/EIS only defines the Salton Sea subregion as the “Salton Sea.” The text in the Executive Summary and Chapter 1 of the Draft EIR/EIS has been revised to read that the definition of the Salton Sea subregion is “The Salton Sea and its existing shoreline at the time that the NOP for the Draft EIR/EIS was published with a 0.5 mile setback around the Sea.” This change is indicated in this Final EIR/EIS in subsections 1.3 and Executive Summary under Section 4.2, Text Revisions. Also note that Chapter 1 in the Draft EIR/EIS recognizes that the region of influence within each subregion could vary depending on the environmental resource being considered.

³³ Setmire, J.G., R.A., Schroeder, J.N., Densmore, S.L., Goodbred, D.J., Audet, and W.R. Radke. 1993. Detailed study of water quality, bottom sediment, and biota associated with irrigation drainage in the Salton Sea area, California, 1988-90: U.S. Geological Survey Water Resources Investigations Report 93-4014, 102 pp.

³⁴ Compare DEIR/DEIS p. ES-3 with p. 1-6.

³⁵ 2002 IID/SDCWA State Water Resources Control Board (hereinafter SWRCB) IID exhibit 49, “Salton Sea Elevations.” The DEIR understates these recent maximum elevations, claiming (without citation) a recent decadal fluctuation ranging from –228.7’ to –226.6’ msl (DEIR/DEIS, p. 3.1-65).

The Salton Sea now receives flow from the Colorado River after that water has been put to use on the surrounding agricultural fields. The drainage from these fields provide the necessary inflows that maintain the current Salton Sea. The protection of those flows for the protection of the Salton Sea is a matter that the DEIR/DEIS has ignored. Yet, the California Supreme Court has stated:

The state as sovereign retains continuing supervisory control over its navigable waters and the lands beneath those waters. This principle, fundamental to the concept of the public trust, applies to rights in flowing waters as well as to rights in tidelands and lakeshores; it prevents any party from acquiring a vested right to appropriate water in a manner harmful to the interests protected by the public trust.³⁶

By dismissing the water necessary to maintain the Salton Sea, the DEIR/DEIS has failed to fully evaluate the environmental consequences of the proposed transfer project on those interests protected by the public trust.

G. ASSUMPTIONS USED IN DEVELOPING BASELINE IMPERMISSIBLY AVOID IMPACT ANALYSIS AND MITIGATION

The document states that the elevation today is -228'. According to the restoration draft EIR/EIS (January 2000) and SSDP's shoreline delineation, the Sea elevation has been determined to be relatively stable at -227 for the past ten years. A stable elevation indicates that evaporation loss from the Sea is equal to inflow over that period (1.36Maf). The document reads that *without implementation of the project*, the Sea will be seven or eight feet lower than it is today. Nowhere here does it say anything about why the "Sea is projected to continue to decline" by the seven or eight feet drop (depending upon the elevation baseline you use) to -235 that the document uses as its baseline. It assumes that 25 (more if you take it from -227) square miles of surface area of the Sea will be exposed *with or without* the project (and therefore not responsible for that impact).

The document assumes that these impacts have already occurred or are going to happen anyway, thereby effectively eliminating the impacts that occur between -227 and -235. This area includes most of the existing wetlands around the Sea today, as well as Mullet Island—the bird nesting island that is only separated by 7 feet deep of water from the mainland.

H. NO PROJECT AND OTHER ALTERNATIVES

Both NEPA and CEQA require the action agency to evaluate alternatives to the proposed project; "this section is the heart of the environmental impact statement."³⁷ However, the DEIR/DEIS fails to adequately explain the alternatives other than the proposed project. NEPA requires that the agency "devote *substantial* treatment to *each* alternative considered in detail including the

³⁶ National Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 445.

³⁷ 40 C.F.R. § 1502.14.

Response to Comment G25-16

SWRCB has considered the issue of whether the public trust doctrine requires that agricultural drainage water be supplied to the Salton Sea: "The public trust doctrine is based upon the state's ownership of navigable waterways and underlying lands as trustee for the benefit of the people. (Citation omitted.) Upon its admission to the Union in 1850, California acquired title as trustee to navigable waterways and underlying lands. (Citation omitted.) No such title or public trust easement was acquired to the property underlying the present Salton Sea since the Sea was not created until 1905. Therefore, regardless of the extent to which the public trust doctrine may or may not apply to an artificial body of water, it is apparent that the doctrine does not justify continued inundation of property to which no public trust easement attaches." SWRCB Order 84-12, footnote 1.

Response to Comment G25-17

Please refer to the Master Response on *Hydrology—Development of the Baseline* in Section 3 of this Final EIR/EIS.

Response to Comment G25-18

The Draft EIR/EIS complies fully with CEQA and NEPA in its description of alternatives and in its analysis of the impacts of the alternatives. The commenter notes that 50 pages are used to describe the Proposed Project and only 4 pages are used to define the No Project Alternative and other Project Alternatives. For this project, this approach is appropriate because each of the Project Alternatives consists of elements of the Proposed Project. Alternatives 2, 3, and 4 are each designed to reduce the impacts of the Proposed Project and are either reduced in amount of conservation or they evaluate different methods of conservation that would reduce impacts. Therefore, the alternative descriptions refer to the description of the Proposed Project and only indicate how each alternative is different. Therefore, fewer pages are required. For the description of the No Project Alternative, fewer pages are necessary because fewer actions/construction are involved inherently. An adequate description of what is reasonably expected to occur in the foreseeable future, if the Proposed Project were not to occur is provided.

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proposed action so that reviewers may evaluate their comparative merits.³⁸ Even a casual glance at section 2 reveals the failure to fully explain each alternative. The DEIR/DEIS devotes 50 pages to describing the proposed project, 2.5 pages to the no action alternative, and 2 pages total for alternatives 2-4.

G25-19

Because of the "integrated nature of the QSA components," and given the cursory descriptions in the DEIR/DEIS, the reviewer is unable to determine which elements of the QSA will remain in effect for each alternative.³⁹ These segmented NEPA and CEQA analyses of the various QSA components serves to further exacerbate these flaws. This section must be revised to explicitly and accurately describe the conditions existing under each alternative.

For example, the no action alternative states that the interim surplus guidelines (ISG) would be suspended, and also states that the biological conservation measures for the LCR would not be implemented.⁴⁰ However, this is inconsistent with the further statement that as long as California meets the benchmarks in section 5(c) of the rod, the ISG will remain in effect.⁴¹ Thus, it is not clear whether the no action alternative includes the implementation of the ISG (assuming other actions that reduce California's Colorado river use), and since the DEIR/DEIS has employed the no action alternative as the baseline, the impacts discussion is similarly impaired.⁴²

III. DEIR/DEIS IMPERMISSIBLY MERGES THE BASELINE AND NO PROJECT ALTERNATIVE

G25-20

CEQA requires that an EIR analyze a No Project alternative.⁴³ The CEQA Guidelines expressly state "The no project alternative analysis is *not the baseline* for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the *existing* environmental setting analysis which does establish that baseline."⁴⁴ In other words, the CEQA Guidelines expressly prohibit the use of the No Project alternative as the "baseline" for environmental analysis, except in the very unusual circumstance that, without the proposed Project, there will be absolutely no change in that environment over time.

The DEIR/DEIS instantly fails this fundamental requirement of law. The DEIR/DEIS expressly admits that the *exact same* model runs from the Salton Sea Accounting Model – model runs 1c and 1d – were used to develop the DEIR/DEIS' "No Project" alternative and its future

Response to Comment G25-19

The No Project Alternative assumes that neither the IID/SDCWA Transfer Agreement nor QSA would be implemented. The QSA is a multi-party settlement agreement which accommodates a number of different programs and projects in an effort to resolve a variety of disputed issues and to balance the competing needs of the participating agencies. If the overall agreement reflected in the QSA is not finalized and implemented, certain component projects, which have already been assessed under CEQA and/or NEPA, could proceed as separate projects. The ISG has already been fully assessed under NEPA and a Record of Decision was approved by Reclamation and published in January 2001. The 1988 IID/MWD Agreement (previously assessed under CEQA and implemented) would continue in effect under the No Project Alternative. The AAC and Coachella Canal lining projects could also proceed based on the Final EIS/EIR for each of these projects, although, as noted in the Draft EIR/EIS, state funding could be jeopardized. Other component projects of the QSA could proceed only after appropriate compliance with CEQA and/or NEPA.

Response to Comment G25-20

Please refer to the Master Response on *Hydrology—Development of the Baseline* in Section 3 of this Final EIR/EIS.

³⁸ 40 C.F.R. § 1502.14(b) (emphasis added).

³⁹ DEIR/DEIS, p. 5-2.

⁴⁰ DEIR/DEIS, p. 2-54.

⁴¹ DEIR/DEIS, p. 2-54.

⁴² Should the no action alternative include implementation of the ISG, it must also be revised to include the conservation measures, since the latter is required for ESA compliance.

⁴³ CEQA Guidelines, § 15126, subd. (e).

⁴⁴ CEQA Guidelines, § 15126, subd. (c)(1) (emphasis added, cross-reference omitted).

"Baseline" for environmental analysis. Moreover, the No Project Alternative repeatedly uses the terms "No Project" and "Baseline" interchangeably.

Model runs 1c and 1d, forecast a Sea in constant change from its present, existing condition. Since these "No Project" model runs plainly disclose that the Sea will change over time without the proposed Project, the "No Project" alternative cannot be "identical to the existing environmental setting analysis which does establish [the Project's] baseline."⁴⁵ Yet, the DEIR/DEIS repeatedly refers in its No Project alternative analysis to the "No Project/Baseline" conditions at the Sea. The DEIR/DEIS' interchangeable use of these two, distinct CEQA concepts is an error as a matter of law that skews the DEIR/DEIS' analysis by improperly shifting the "baseline" to a future period.

IV. FAILURE TO PROPERLY ANALYZE CUMULATIVE IMPACTS DUE TO USE OF "NO PROJECT" ALTERNATIVE AS BASELINE

CEQA requires that an EIR analyze a proposed Project's significant cumulative impacts.⁴⁶ "[A] cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts."⁴⁷ "An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects."⁴⁸

An EIR cannot dismiss cumulative impacts simply because other projects and activities are already severely impacting the existing environment. For example, in *Kings County Farm Bureau v. City of Hanford*, the City of Hanford sought to approve a proposed coal-fired cogeneration power plant in an area where other activities had already resulted in degraded air quality.⁴⁹ The City, in its EIR, claimed that the project's cumulative air quality impacts were insignificant, because they were "relatively minor when compared with other sources."⁵⁰ The appellate court flatly rejected the City's theory, and held that cumulative impacts analysis must assess the collective or combined effects of the proposed project with other past, present and reasonably foreseeable future projects:

We find the analysis used in the EIR and urged by [the Project applicant] avoids analyzing the severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling. Under [the applicant's] "ratio" theory, the greater the overall problem, the less significance a project has in a cumulative impacts analysis. We conclude

⁴⁵ CEQA Guidelines, § 15126, subd. (e)(1).

⁴⁶ CEQA Guidelines, § 15130, subd. (a).

⁴⁷ CEQA Guidelines, § 15130, subd. (a)(1).

⁴⁸ CEQA Guidelines, § 15130, subd. (b)(3).

⁴⁹ *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692.

⁵⁰ *Kings County*, *supra*, 221 Cal.App.3d at p. 720.

Response to Comment G25-21

Please refer to the Master Response on *Hydrology—Development of the Baseline* in Section 3 of this Final EIR/EIS.

the standard for a cumulative impacts analysis is defined by the use of the term "collectively significant" in Guidelines section 15355 and the analysis must assess the collective or combined effect of energy development. The EIR improperly focused upon the individual project's relative effects and omitted facts relevant to an analysis of the collective effect this and other sources will have upon air quality.⁵¹

The DEIR/DEIS' use of its projected "baseline" stands this fundamental tenet of cumulative impacts analysis on its head. Rather than *cumulating* and then reviewing the impacts of the proposed Project along with all other source-depleting activities that are currently being undertaken or are planned by IID, CVWD and MWD, the DEIR/DEIS instead adds all of these other impacts together in its projected "baseline." The Model's 12- and 75- year outputs are then improperly used as a starting-point comparison for deciding whether transferring an *additional* 130 KAFY to 300 KAFY out-of-basin might have significant impacts. Having ensured that the projected baseline already spells disaster for the Salton Sea, the DEIR/DEIS improperly concludes that the transfers' acceleration of and "incremental" contributions to these other projects' impacts on Hydrology and Water Quality and on Biological Resources must be less than significant.

Having incorporated the adverse impacts of all other projects into its baseline for environmental analysis, the DEIR/DEIS' cumulative impacts analysis is unlawfully stunted and oversimplified: the improper inclusion of all other projects' impacts into the "baseline" leaves nothing to cumulatively analyze.

The Water Transfer DEIR/DEIS' "analysis" of cumulative impacts to Hydrology and Water Quality is a total of two paragraphs, and incredibly concludes that "[n]o significant cumulative impact would occur to hydrology and water quality of the Salton Sea with implementation of the Proposed Project and other related projects," despite the fact that the DEIR/DEIS plainly states that the water level will fall some 22 feet (nearly 1/2 the current depth of the Sea) and result in salinity of up to 162,000 mg/L TDS (nearly four times the Sea's present salinity).⁵²

The DEIR/DEIS' Biological Resources cumulative impacts analysis claims that *all* cumulative impacts will be "avoid[ed] and/or mitigate[d]" by implementation of the proposed Project's HCP component, and that implementation of the proposed Project and its proposed HCP will only have beneficial impacts on affected species.⁵³ However, the proposed HCP explicitly states that it is *only* designed to offset the proposed Project's incremental impacts: "It is unreasonable and impractical for the water conservation and transfer programs to bear the burden of restoring the Salton Sea. [¶]The level of mitigation should be scaled to the impact attributable to the water conservation and transfer programs."⁵⁴ Because the DEIR/DEIS refuses to recognize and assess

⁵¹ *Kings County, supra*, 221 Cal.App.3d 692, 721.

⁵² DEIR/DEIS, § 5.0, p. 5-33.

⁵³ *Id.* at p. 5-34.

⁵⁴ DEIR/DEIS, Append. C, p. 3-25.

all other projects' negative impacts – instead burying them in the projected “Baseline” – the DEIR/DEIS' cumulative impacts analysis fails to disclose the truth; cumulative impacts to the Sea's Biological Resources will, in fact, remain significant *despite* implementation of the proposed Projects' parsimonious HCP.

To put it in the kindest possible light, the DEIR/DEIS' analysis of cumulative impacts is factually erroneous and legally inadequate. The DEIR/DEIS cannot be certified until it actually “assess[es] the collective or combined effect of [water diversions from the Salton Sea].”⁵⁵

V. ADDITIONAL COMMENTS ON WATER QUALITY ANALYSIS

A. SELENIUM

The DEIR finds that selenium concentrations currently exceed fresh water quality criteria in surface drains and at the outlets of the Alamo and New Rivers, and that such concentrations would increase under the Proposed Project.⁵⁶ Yet the DEIR claims a finding of *unavoidable* impact.⁵⁷ This is patently false. The increases in selenium concentrations are significant impacts that could and should be mitigated. Various on-going selenium mitigation programs exist within California and within the Upper Colorado River basin, undermining the DEIR's questionable finding. Such mitigation could be implemented within the Imperial Valley, through wetland management programs based upon current programs in California's Central Valley that may have reduced selenium concentrations by as much as 90%.⁵⁸ IID could also contribute to Colorado River Upper Basin source reduction programs. A pilot project in the Montrose Arroyo Basin of western Colorado reported a decrease of selenium loadings by 28%.⁵⁹

Recommendation – Identify and develop an appropriate program to mitigate for the increase in selenium concentrations due to the Proposed Project, via one or more of: wetland management programs, targeted efforts at disproportionately high sources of selenium within the Imperial Valley, and/or support for Upper Colorado River Basin selenium source reduction programs.

B. TEMPERATURE

The temperature of the Salton Sea affects many of the species in the Sea, with low winter temperatures causing tilapia mortality and high summer temperatures further decreasing the availability of oxygen, stressing aquatic life. Because the Sea is a broad and shallow body of

Response to Comment G25-22

Please refer to the Master Response on *Hydrology—Selenium Mitigation* in Section 3 of this Final EIR/EIS.

Response to Comment G25-23

A revised HCP alternative has been selected to mitigate biological impacts to the Salton Sea. For more information, please refer to the Master Response on *Biology—Approach to Salton Sea Habitat Conservation Strategy* in Section 3 of this Final EIR/EIS.

⁵⁵ *Kings County, supra*, 221 Cal.App.3d 692, 721.

⁵⁶ See DEIR/DEIS, Table ES-1, pp. FS-17-18; Table 3.1-4, p. 3.1-56.

⁵⁷ See DEIR/DEIS, p.3.1-111 (stating “This impact cannot be mitigated.”)

⁵⁸ Agrarian Research and Management Company, Ltd., cited in 2002 SWRCB California Regional Water Quality Control Board-CRBR Exhibit No. 2.

⁵⁹ Butler, David L. 2001. *Effects of piping irrigation laterals on selenium and salt loads, Montrose Arroyo Basin, western Colorado*. U.S. Geological Survey Water Resources Investigations Report 01-4204. 14 pp.

water, it responds relatively quickly to changes in air temperature. Average water temperatures in the Sea vary seasonally from the low 50s to the upper 90s; water temperatures at the surface of the Sea vary more than 70 degrees Fahrenheit annually.⁶⁰

In 2000, air temperatures in the Imperial Valley ranged from a low of 35° F to a high of 112° F.⁶¹ The current size of the Salton Sea dampens these temperature fluctuations. As the Sea shrinks, water temperature fluctuations would increase. The DEIR fails to account for the biological impacts resulting from a reduction in the Salton Sea's thermal inertia due to the Proposed Project's reduction in inflows. The DEIR projects that the Sea's elevation will drop to a mean of -245' msl by 2030. According to the Elevation/Area/Capacity data provided in Table 5.1 of Appendix F, at this elevation the Sea would have a volume of 3.8 MAF, roughly half of its current volume. This dramatic reduction in thermal mass would increase the Sea's annual fluctuation in temperature, further stressing aquatic species. The DEIR completely ignores this important water quality parameter. Indeed, the Sea's 50% reduction in volume could potentially have more immediate impacts on tilapia viability than would the rise in salinity. Moreover, this loss of thermal mass represents a distinct impact of the proposed project; under a properly characterized baseline, the size of the Sea would not diminish significantly.

Recommendation – Describe the range of impacts to biological resources due to the decrease in the Sea's thermal mass.

VI. BIOLOGICAL RESOURCES

Because the DEIR/DEIS impermissibly relies upon a predictive model to develop the baseline for the environmental evaluation that occurs within the document, the DEIR/DEIS fails to acknowledge the significant impacts to biological resources associated with a decline in elevation.

In addition to this fundamental criticism of the DEIR/DEIS the organizations have the following comments on the proposed project's significant adverse effect on biological resources.

The accelerated loss of the fishery at the Salton Sea is dismissed "Because all fish species are introduced, non-native species, the impacts are less than significant."⁶² This remarkable assertion both ignores the endangered native desert pupfish, and the tremendous resource offered by the Salton Sea's estimated 160 million fish. While one cannot help but admire the hubris of dismissing the loss of 160 million fish as "less than significant," this is clearly a significant, unmitigated impact.

Response to Comment G25-24

Please refer to the Master Response on *Hydrology—Development of the Baseline* in Section 3 of this Final EIR/EIS.

Response to Comment G25-25

Please refer to the Master Response on *Biology—Impact Determination for Fish in the Salton Sea* in Section 3 of this Final EIR/EIS.

⁶⁰ Cohen, MJ, JJ Morrison, and EP Glenn. 1999. *Haven or Hazard: The Ecology and Future of the Salton Sea*. Oakland, CA: Pacific Institute. 63 pp.

⁶¹ IID Fact Sheet: Weather Summary: Imperial Valley 2000.

⁶² DEIR/DEIS, p. 3.2-150.

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Additionally, the DEIR/DEIS' assessment of biological impacts is not consistent with that of the January 2002 draft programmatic EIR for Implementation of the Colorado River QSA, which finds that "The accelerated change in the natural habitat of the desert pupfish is considered a *potentially significant impact*. Significant impacts would occur to the California brown pelican, black skimmer, double-crested cormorant, and other resident and migratory birds that forage on fish."⁶³

G25-27

The DEIR/DEIS notes that "Impacts associated with a decline in [the Salton Sea's] elevation are discussed in Sections 3.3 Geology and Soils, 3.6 Recreation, 3.7 Air Quality, and 3.11 Aesthetics," failing to recognize the potential impacts to biological resources associated with a decline in elevation.⁶⁴ Such impacts would include a loss of valuable shoreline habitat, the exposure of land bridges connecting existing island rookeries to the mainland, and loss of connectivity between pupfish populations. cursory discussions of such impacts are relegated to Appendix C, but they should be appropriately summarized and described within Section 3.2 Biological Resources.

Recommendation – include an adequate description of the potential impacts to biological resources associated with a decline in the Salton Sea's elevation within Section 3.2.

A. FISH

G25-28

The DEIR/DEIS inconsistently addresses the salinity tolerance of tilapia, at one point suggesting that tilapia can be expected to survive in the Salton Sea until its salinity reaches 120 g/L, while later suggesting that the loss of the tilapia fishery will occur at or near 60 g/L, and that the loss of all fish (including desert pupfish) could occur at about 80 g/L.⁶⁵ The use of apocalyptic salinity thresholds or triggers as stark determinants of species' viability ignores the absence of empirical evidence of any such salinity thresholds; population abundance or productivity would be expected to change continuously in response to increases in salinity.⁶⁶ Table 3.2-43 appropriately reflects the uncertainty of specific impacts and thresholds, though it fails to define its generalized probabilities (i.e., does "extreme" indicate a probability >99% and "high" a probability >95%? Or are these purely qualitative terms and if so, how are they defined?). Additionally, this table inconsistently lists the probability of the reproductive failure of tilapia as "high" at both 45 and 55 g/L, while the text later suggests that tilapia "could acclimate to and reproduce at a salinity level of 60 g/L."⁶⁷

⁶³ Draft QSA DPEIR, Table ES-1, p. ES-45-46.

⁶⁴ DEIR/DEIS, p. 3.0-15.

⁶⁵ Compare DEIR/DEIS, p. 2-5, with p. 3.2-147. The counter-intuitive assertion that "tilapia have been collected at a salinity as high as 120 ppt" warrants documentation and explanation.

⁶⁶ Hurlbert, SH. 1991. Salinity thresholds, lake size, and history: a critique of the NAS and CORI reports on Mono Lake. *Bulletin of the Southern California Academy of Science* 90: 41-57.

⁶⁷ DEIR/DEIS, p. 3.2-149.

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Potentially significant impacts to desert pupfish would be avoided or mitigated by implementing the measures described in the Desert Pupfish Conservation Strategy (see Section 3.7.2 of the draft HCP). Impacts on pelicans and other piscivorous birds due to a reduction in fish abundance are discussed under Impact BR-46. The Proposed Project would accelerate the changes in fish abundance and the subsequent response of piscivorous birds by about 11 years relative to the Baseline. The earlier occurrence of adverse effects to piscivorous birds is considered a significant but avoidable impact of the water conservation and transfer component of the Proposed Project. Implementation of the HCP component of the Proposed Project would reduce this impact to less than significant (see Impact BR-52). See the Master Response on *Biology-Approaches to Salton Sea Conservation Strategy* in Section 3 of this Final EIR/EIS.

Response to Comment G25-27

The text has been revised to state "Impacts associated with a decline in the elevation are discussed in Sections 3.2 Biological Resources, 3.3 Geology and Soils, 3.6 Recreation, 3.7 Air Quality, and 3.11 Aesthetics." Impacts to biological resources from reductions in water surface elevation of the Salton Sea are evaluated under Impacts BR - 42, 48, and 49.

Response to Comment G25-28

The comment correctly recognizes the uncertainty regarding the salinity tolerance and the ultimate threshold for fish survival at the Salton Sea. It is acknowledged that the ecological complexity and the dynamic nature of the Salton Sea ecosystem complicate future predictions. This uncertainty is characterized in the Draft EIR/EIS under Impact BR - 45 and in the HCP in Section 3.3.1.1. Table 3.2-43 (based on Hagar and Garcia 1988) presents the qualitative predictions of the sequence of biological events that would occur as the Sea increases in salinity. While the actual threshold for fish in the Salton Sea is in question, the best available information suggests that a decline in tilapia reproduction will occur at a salinity of approximately 60 ppt. Under the revised approach to the mitigating impacts at the Salton Sea, IID, in coordination with USFWS and CDFG, expanded the level of mitigation (i.e., agreed to provide water to the Sea for a longer period) to account for this uncertainty and to provide additional protection to the resource. Please see the Master Response for *Biology—Approach to Salton Sea Habitat Conservation Strategy* in Section 3 of this Final EIR/EIS for additional information on how this uncertainty was addressed.

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Recommendation – given that the DEIR/DEIS designates tilapia an indicator species and the critical food supply for fish-eating birds, the DEIR/DEIS should include a consistent, detailed, documented description of tilapia's life history, with references to existing studies on juvenile and adult salinity tolerance, impacts of salinity, selenium, low dissolved oxygen, and other stressors.

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Tilapia are sensitive to water temperatures below 55° F and are subject to large-scale die-offs in cold winter months.⁶⁸ High summer temperatures can reduce the availability of oxygen in the Sea, exacerbating the impacts of algal blooms and wind-generated mixing of anoxic bottom waters, increasing mortality rates. The DEIR/DEIS fails to account for the exacerbation of existing temperature fluctuations at the Sea due to the Proposed Project (see **Water Quality – Temperature**, above). Such temperature-driven mortality potentially could exceed losses due to the rise in salinity.

Recommendation – describe the increase in temperature-generated fish mortality and potential indirect impacts to fish-eating birds.

G25-30

Concentration of fish. On pg. 2-49 in the DEIR/DEIS it mentions that the highest densities of fish are found around the New and Alamo rivers and nearshore areas extending about 6,458 feet from the shore line. Tilapia productivity of the nearshore area is estimated at 3600kg/ha/yr, far exceeding productivity of tilapia in tropical lakes. This figure is contrary to the figures quoted in Appendix C on page 3-4 (with the same references), where the distance is given as 1,970 feet from shoreline. The catches per unit effort of tilapia in the deltas and nearshore areas were more than 10-30 times greater than in the pelagic areas. The feeding habits of tilapia are very different from pelagic (zooplankton) to nearshore (sediment and detrital matter) areas.

Since Se is associated with the sediments, Se levels in fish may vary greatly between pelagic and nearshore samples. The OEHA web page⁶⁹ still carries a sports fish consumption advisory for the Salton Sea (Imperial and Riverside Counties) that states: "Because of elevated selenium levels, no one should eat more than four ounces of croaker, orangemouth corvina, sargo, or tilapia taken from the Salton Sea in any two-week period. Women who are pregnant or may become pregnant, nursing mothers, and children age 15 and under should not eat fish from this area. (An additional warning for the New River has been published and posted by the Imperial County Health Department for people to avoid physical contact with the waters of the New River and to avoid eating any fish of any variety taken from the river.)"⁷⁰

Recommendation – The DEIR/DEIS must make a much more detailed evaluation of the health status of the fishery. The DEIR/DEIS must also investigate the possibility that the concentration of tilapia within the 0.39 mile area is due to lower salinity levels caused by the relatively fresh water inflow of the New and Alamo Rivers. If this is so, the inflow from these two rivers would

⁶⁸ Setmire et al. 1993.

⁶⁹ www.oehha.org/home.html

⁷⁰ www.oehha.org/fish/general/99fish_part2.html

Response to Comment G25-29

The comment correctly identifies water temperature as an important determinant of fish health. While the EIR/EIS focuses on salinity as the most likely factor influencing the ability of the fishery to be sustained in the Salton Sea, water temperature also could contribute alone or synergistically to rendering the Sea unsuitable for fish. Under the Salton Sea Conservation Strategy, no reduction in inflow attributable to the water conservation and transfer project would occur until after 2030, when fish are not projected to remain in the Salton Sea under the Baseline. Thus, this strategy would avoid water temperature and other potential effects to fish attributable to water conservation and transfer. See the Master Response for *Biology—Approach to Salton Sea Habitat Conservation Strategy* in Section 3 of this Final EIR/EIS.

Response to Comment G25-30

The distance that the nearshore area extends is correctly identified in the HCP (page 3-4 of Appendix C) as 1,970 feet. Page 2-49 of the Draft HCP (Appendix C of the Draft EIR/EIS) incorrectly lists this distance as 6,458 feet (600 meters). The 600 meter distance is correct, but the translation to feet has been changed to reflect the correct conversion. This change is indicated in Attachment A, Habitat Conservation Plan, of this Final EIR/EIS.

There is no reason to expect that basic processes of uptake and precipitation that serve to limit water-borne selenium concentrations in the Sea will be significantly altered by the projected increase in salinity. Selenium that enters the Sea is quickly reduced to selenite and incorporated into fine sediments and settled biomass (Setmire and Schoeder 1998). Such bacterial reduction processes will not be eliminated by projected increases in selenium (see response to Comment R5-74). As the food web of the Sea simplifies and predatory sport fish are reduced or eliminated, the risk of human exposure to elevated selenium levels in sport fish would likely be reduced.

It is noted under Impact BR-45 that "Tilapia could persist if the deltas provide lower salinity environments." While it is true that the highest densities of tilapia have been noted in the nearshore and delta areas at the mouths of the rivers, there is no evidence that this density would increase with increasing salinity in the Sea or result in higher avian mortality.

result in a prolonged survival of this fishery. The DEIR/DEIS must also investigate the possibility that, as proposed in two peer-reviewed papers in the Journal of Ecological Modeling, this excess crowding of tilapia leads to an excessive number of diseased fish, resulting in heightened avian mortality.

B. BIRDS

Shorebird counts at the Salton Sea exceed 78,000 individuals in fall, 68,000 in spring, and 27,000 in winter, with large numbers of black-necked stilts, American avocets, western sandpipers, and dowitcher species reported. These shorebirds are concentrated primarily on unvegetated beaches and alkali flats along the Sea's south shoreline.⁷¹ The DEIR/DEIS reports that such unvegetated areas constitute 25% of the adjacent wetlands at the Salton Sea, yet fails to quantify the loss of such habitat due to the projected decline in the Sea's elevation, or assess how the loss of such habitat might impact shorebirds.⁷² In the air quality section, the DEIR/DEIS contends that a fairly stable salt crust would form on exposed lakebed, suggesting that the Salton Sea's newly exposed shoreline would not provide suitable habitat for the species that shorebirds currently prey upon.⁷³

Recommendation – quantify the decrease in unvegetated shoreline habitat due to the proposed project and assess the impacts this will have on shorebirds.

Recommendation – Develop an adequate mitigation plan for these impacts.

The Salton Sea provides valuable habitat for a significant percentage of the North American population of American white pelicans, as well as other special status fish-eating birds. The proposed project would greatly accelerate the loss of the Salton Sea's fishery, destroying important habitat for these birds. This potential loss of habitat is especially alarming given the loss of more than 90% of California's wetlands, dramatically limiting the options available to these birds. The proposed mitigation for impacts to fish-eating birds is defined inadequately and is unlikely to provide any real benefits for such birds.

C. ADDITIONAL COMMENTS ON PROJECT'S IMPACTS ON BIRDS.⁷⁴

⁷¹ Shuford, W.D., Warnock, N., et al. 2002. Patterns of shorebird use of the Salton Sea and adjacent Imperial Valley, California. *Studies in Avian Biology* (forthcoming).

⁷² DEIR/DEIS, Append. C, p. 2-43.

⁷³ DEIR/DEIS, p. 3.7-35.

⁷⁴ These following comments were prepared by Dr. Nils Warnock of the Point Reyes Bird Observatory and pertain primarily to avian resource issues at the Salton Sea and the surrounding Imperial Valley in reference to the proposed water transfer. These comments are based on Dr. Warnock's extensive experience at and around the Salton Sea via a year-long avian reconnaissance survey in 1999 for which he was the principal investigator, prior survey work on various shorebirds at the Sea in the late 1980s, and extensive knowledge of wetland bird issues

Response to Comment G25-31

The unvegetated areas classified as adjacent wetlands in the Salton Sea database likely represent areas of partial inundation and seepage and function as mudflats and shallow water areas around the Sea. The potential impacts to mudflat and shallow water habitat are discussed under Impact BR-49 and are determined to be less than significant. Also see the response to Comment G25-82.

Impacts on pelicans and other piscivorous birds due to a reduction in fish abundance are discussed under Impact BR-46. The Proposed Project would accelerate the changes in fish abundance and the subsequent response of piscivorous birds relative to the Baseline. The earlier occurrence of adverse effects to piscivorous birds is considered a significant, but avoidable, impact of the water conservation and transfer component of the Proposed Project. Implementation of the HCP component of the Proposed Project would avoid this impact. See the Master Response for *Biology—Approach to Salton Sea Habitat Conservation Strategy* in Section 3 of this Final EIR/EIS.

Response to Comment G25-32

Comment noted. Specific comments presented by Dr. Nils Warnock have been delineated and responses are provided. Please refer to responses given for Comments G25-33 through G25-45.